



BILLING CODE 6560-50-P

## ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPP-2013-0776; FRL-9904-66]

### Nominations to the FIFRA Scientific Advisory Panel; Request for Comments

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice.

**SUMMARY:** This notice provides the names, addresses, professional affiliations, and selected biographical data of persons recently nominated to serve on the Scientific Advisory Panel (SAP) established under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The Agency, at this time, anticipates selecting two new FIFRA SAP members to serve, as a result of membership terms that expire in 2014. Public comments on the current nominations are invited. These comments will be used to assist the Agency in selecting the new FIFRA SAP members.

**DATES:** Comments, identified by docket identification (ID) number EPA-HQ-OPP-2013-0776, must be received on or before *[INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]*.

**ADDRESSES:** Submit your comments, identified by docket ID number EPA-HQ-OPP-2013-0776, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

- *Mail*: OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001.

- *Hand Delivery*: To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at

*<http://www.epa.gov/dockets/contacts.html>.*

**FOR FURTHER INFORMATION CONTACT:** Fred Jenkins, Designated Federal Officer (DFO), Office of Science Coordination and Policy (7201M), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001; telephone number: (202) 564-3327; fax number: (202) 564-8382; email address: *jenkins.fred@epa.gov*.

## **SUPPLEMENTARY INFORMATION:**

### **I. General Information**

#### *A. Does this Action Apply to Me?*

This action is directed to the public in general. This action may, however, be of interest to persons who are or may be required to conduct testing of chemical substances under the Federal Food, Drug, and Cosmetic Act (FFDCA) and FIFRA. Since other entities may also be interested, the Agency has not attempted to describe all the specific entities that may be affected by this action.

#### *B. What Should I Consider as I Prepare My Comments for EPA?*

When submitting comments, remember to:

1. Identify the document by docket ID number and other identifying information (subject heading, **Federal Register** date and page number).

2. Follow directions. The Agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.

3. Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.

4. Describe any assumptions and provide any technical information and/or data that you used.

5. If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.

6. Provide specific examples to illustrate your concerns and suggest alternatives.

7. Explain your views as clearly as possible, avoiding the use of profanity or personal threats.

8. Make sure to submit your comments by the comment period deadline identified.

## **II. Background**

The FIFRA SAP serves as the primary scientific peer review mechanism of EPA's Office of Chemical Safety and Pollution Prevention (OCSPP) and is structured to provide scientific advice, information, and recommendations to the EPA Administrator on pesticides and pesticide-related issues as to the impact of regulatory actions on health and the environment. The FIFRA SAP is a Federal advisory committee, established in 1975 under FIFRA, that operates in accordance with requirements of the Federal Advisory Committee Act (FACA). The FIFRA SAP is composed of a permanent panel consisting of seven members who are appointed by the EPA Deputy Administrator from

nominees provided by the National Institutes of Health (NIH) and the National Science Foundation (NSF). FIFRA, as amended by the Food Quality and Protection Act (FQPA), established a Science Review Board consisting of at least 60 scientists who are available to the FIFRA SAP on an ad hoc basis to assist in reviews conducted by the FIFRA SAP. As a peer review mechanism, the FIFRA SAP provides comments, evaluations, and recommendations to improve the effectiveness and quality of analyses made by Agency scientists. Members of the FIFRA SAP are scientists who have sufficient professional qualifications, including training and experience, to provide expert advice and recommendation to the Agency.

The Agency, at this time, anticipates selecting two new members to serve on the panel as a result of membership terms that expire in 2014. The Agency requested nominations of experts in the fields of human toxicology, environmental toxicology, pathology, risk assessment, and/or environmental biology with demonstrated experience and expertise in all phases of the risk assessment process including: Planning, scoping, and problem formulation; analysis; and interpretation and risk characterization (including the interpretation and communication of uncertainty). Nominees should be well published and current in their field of expertise. FIFRA stipulates that we publish the name, address, and professional affiliation of the nominees in the **Federal Register**.

### **III. Charter**

A Charter for the FIFRA SAP, dated October 19, 2012, was issued in accordance with the requirements of FACA (5 U.S.C. App. I).

### *A. Qualifications of Members*

FIFRA SAP members are scientists who have sufficient professional qualifications, including training and experience, to be capable of providing expert comments as to the impact of pesticides on health and the environment. No persons shall be ineligible to serve on FIFRA SAP by reason of their membership on any other advisory committee to a Federal department or agency or their employment by a Federal department or agency (except EPA). The EPA Deputy Administrator appoints individuals to serve on FIFRA SAP for staggered terms of 3 years. FIFRA SAP members are subject to all ethics requirements applicable to Special Government Employees, which include rules regarding conflicts of interest. Each nominee selected by the EPA Deputy Administrator, before being formally appointed, is required to submit a confidential statement of employment and financial interests, which shall fully disclose, among other financial interests, the nominee's sources of research support, if any.

In accordance with FIFRA section 25(d)(1), all nominees considered for appointment to FIFRA SAP shall furnish information concerning their professional qualifications, educational background, employment history, and scientific publications.

### *B. Applicability of Existing Regulations*

With respect to the requirements of FIFRA section 25(d) that the EPA Administrator promulgate regulations regarding conflicts of interest, EPA's existing ethics regulations applicable to Special Government Employees, which include advisory committee members, will apply to the members of FIFRA SAP.

*C. Process of Obtaining Nominees*

In accordance with FIFRA section 25(d), EPA, on September 27, 2013, requested that NIH and NSF nominate scientists to fill vacancies occurring on FIFRA SAP. The Agency requested nominations of experts in the fields of human toxicology, environmental toxicology, pathology, risk assessment, and/or environmental biology with demonstrated experience and expertise in all phases of the risk assessment process including: Planning, scoping, and problem formulation; analysis; and interpretation and risk characterization (including the interpretation and communication of uncertainty). NIH and NSF responded by letter, providing the Agency with a total of 21 nominees. Copies of these letters, with the listed nominees, are available in the docket at docket ID number EPA-HQ-OPP-2013-0776. Of the 21 nominees, 10 are interested and available to actively participate in FIFRA SAP meetings (see Unit IV.). In addition to the current nominees interested, at EPA's discretion, nominees who were interested and available during the previous nomination process (see the **Federal Register** of July 29, 2011 (76 FR 45555) (FRL-8882-2) may also be considered. Of the current 21 nominations, the following 11 individuals are not available:

1. Asa Bradman, Ph.D., University of California--Berkeley, Berkeley, CA.
2. Aaron Blair, Ph.D., National Cancer Institute, Bethesda, MD.
3. William Bradshaw, Ph.D., University of Oregon, Eugene, OR.
4. Carlos Davidson, Ph.D., San Francisco State University, San Francisco, CA.
5. Vincent Hand, Ph.D., HandCompass Consulting LLC, Oxford, OH.
6. Lawrence M. Hanks, Ph.D., University of Illinois at Urbana--Champaign, Urbana, IL.

7. Charles Lynch, M.D., University of Iowa, Iowa City, IA.
8. Thomas A.E. Platts-Mills, M.D., University of Virginia, Charlottesville, VA.
9. Alvaro Puga, Ph.D., University of Cincinnati, College of Medicine, Cincinnati, OH.
10. Theodore Slotkin, Ph.D., Duke University School of Medicine, Durham, NC.
11. Rick Relyea, Ph.D., University of Pittsburgh, Pittsburgh, PA.

#### **IV. Nominees**

Following are the names, addresses, professional affiliations, and selected biographical data of current nominees being considered for membership on the FIFRA SAP. The Agency anticipates selecting two individuals to fill vacancies occurring in 2014.

1. Dana Boyd Barr, Ph.D., Emory University, Atlanta, GA--i. *Expertise:* Exposure science and environmental health.
- ii. *Education:* B.S. in Biology from Brenau College and Ph.D. in Analytical Chemistry from Georgia State University.
- iii. *Professional Experience:* Dr. Barr is a Professor of Exposure Science and Environmental Health at Emory University's Rollins School of Public Health, Department of Environmental Health. Although she has been in academia for just 3 years, she has worked to successfully establish a team of cohort studies evaluating maternal-child health, paternal reproductive health, and farmworker safety in Thailand. She is also collaborating on several child and farmworker cohorts in the United States. In addition, she just received funding to evaluate brominated flame retardant exposures and thyroid function in small children. Prior to joining Emory, Dr. Barr was employed at the

Centers for Disease Control and Prevention (CDC) for 23 years. During her tenure at CDC, she devoted much of her time to the development of methods for assessing human exposure to a variety of environmental toxicants including current-use pesticides, phthalates, organochlorine chemicals (pesticides and polychlorinated biphenyls (PCBs)), phytoestrogens, diethylene glycol, methyl eugenol, vinyl chloride, and others. Dr. Barr has authored or coauthored over 300 peer-reviewed publications, book chapters, and many published abstracts. Some of these papers have been landmark papers showing human exposure to pesticides in the general population and determining appropriate matrices for biomonitoring at each life stage. She is the past President of the International Society of Exposure Science (ISES; formerly ISEA) and previously served as its Treasurer; she just completed a 5-year term as Editor-in-Chief of ISES's official journal, *Journal of Exposure Science and Environmental Epidemiology*. She is also an Associate Editor of *Environmental Health Perspectives* and serves on the editorial board of the *Journal of Chromatography & Separation Techniques*, *Journal of Health Research*, and *Advances in Medicine*. She is also an active member of the International Society of Environmental Epidemiology, Society of Toxicology, American Chemical Society, American Society for Mass Spectrometry, and the Association of Official Analytical Chemists. She has served many important roles in the field of exposure assessment including serving on EPA review boards such as the FIFRA SAP, chairing and co-chairing sessions at international and domestic meetings, serving on the National Children's Study Working Group for chemical exposures, serving as an international expert in pesticide methodology and exposure assessment, serving on the German Research Foundation's Committee for Standardizing Analytical Methods for



Occupational and Environmental Chemistry, and serving on International Life Sciences Institute/Health and Environmental Sciences Institute's steering and technical committees for the Integration of Biomonitoring Data into Risk Assessment. As a result of her efforts, Dr. Barr has received many awards including International Society of Exposure Science's Daisey Award for Outstanding Investigator, two Health and Human Services Secretary's awards for exposure-health investigations involving diethylene glycol and methyl parathion poisoning, 2004 Federal Scientific Employee of the Year, CDC's Mackel Award for outstanding collaboration among epidemiology and laboratory, and EPA's Silver Medal for outstanding contributions to the development of protocols for the National Children's Study.

2. Paul D. Blanc, M.D., University of California San Francisco (UCSF), San Francisco, CA--i. *Expertise:* Occupational and environmental medicine.

ii. *Education:* B.A. from Goddard College, M.S. in Public Health from Harvard School of Public Health, and M.D. from Albert Einstein College of Medicine.

iii. *Professional Experience:* Dr. Blanc, is Professor of Medicine and holds the Endowed Chair in Occupational and Environmental Medicine at UCSF, where he has been on the faculty since 1988. He received his B.A. from Goddard College, where he first became interested in health and the environment, later training at the Harvard School of Public Health (in industrial hygiene), the Albert Einstein School of Medicine, and Cook County Hospital (in a joint Occupational Medicine and Internal Medicine Residency). He was a Robert Wood Johnson Clinical Scholar at UCSF from 1985-1987 and a Fulbright Senior Research Scholar at the Ben Gurion University of the Negev in 1987-1988. He has been a resident scholar at the Rockefeller Bellagio Center (Bellagio,

Italy) and the American Academy in Rome. In 2011, he was elected as a fellow of the Collegium Ramazzini, an international honorific society of occupational health leaders. In 2013-2014 he is a Mellon Fellow at the Center for Advanced Studies in the Behavioral Sciences at Stanford University. He has authored numerous scholarly publications in his field and is also the author of “How Everyday Products Make People Sick” (University of California Press, 2009). He posts a blog, Household Hazards, hosted by the journal, *Psychology Today* (<http://www.psychologytoday.com/blog/household-hazards>).

3. Rachel M. Bowden, Ph.D., Illinois State University, Normal, IL--i.

*Expertise:* Ecological Physiology and Endocrinology

ii. *Education:* B.A. in Environmental, Population & Organismal Biology from University of Colorado-Boulder and Ph.D. in Evolution, Ecology and Behavior from Indiana University-Bloomington.

iii. *Professional Experience:* Dr. Bowden is currently a Professor in the School of Biological Sciences at Illinois State University. She has received broad training in the biological sciences, but her specific expertise is in ecological physiology with a focus on endocrinology. She has been interested in maternal resource provisioning to offspring, particularly yolk steroids and the consequences of those maternal resources on offspring, for nearly 20 years. Her research has evolved from simply documenting patterns related to yolk steroids to trying to understand how, mechanistically, embryos respond to and cope with the presence of exogenous, biologically active agents during development. More recently, her research group has been working with bisphenol-A. Their interest in this compound lies in its ability to induce estrogen-like properties, and they are currently

examining the effects of exposure to bisphenol-A during early development using the red-eared slider turtle (*Trachemys scripta*) as a model system.

4. Richard Thomas Di Giulio, Ph.D., Duke University, Durham, NC--i. *Expertise:* Environmental toxicology.

ii. *Education:* B.A. in Comparative Literature from University of Texas at Austin, M.S. in Wildlife Biology from Louisiana State University, and Ph.D. in Environmental Toxicology from Virginia Polytechnic Institute and State University

iii. *Professional Experience:* Dr. Di Giulio is Professor of Environmental Toxicology in the Nicholas School of the Environment at Duke University where he also serves as Director of the Integrated Toxicology and Environmental Health Program, Director of the Superfund Research Center, and Co-Principal Investigator for the Center for the Environmental Implications of Nanotechnology. Dr. Di Giulio has published extensively on subjects including biochemical and molecular mechanisms of adaptation and toxicity, biomarkers for chemical exposure and toxicity, and effects of chemical mixtures and multiple stressors. His current work focuses on mechanisms by which polycyclic aromatic hydrocarbons (PAHs) and nanomaterials perturb embryonic development in fish models (zebrafish and killifish), the evolutionary consequences of hydrocarbon pollution on fish populations, and the ecological and human health impacts of mountaintop coal mining in Appalachia. Additionally, he has organized symposia and workshops, and written on the broader subject of interconnections between human health and ecological integrity. Dr. Di Giulio serves as an advisor for the Science Advisory Board of EPA, is a member of the Scientific Advisory Board, U.S. Department of Defense, Strategic Environmental Research and Development Program, is Associate

Editor for *Environmental Health Perspectives*, and recently served on the National Academy of Science Committee on Exposure Assessment in the 21<sup>st</sup> Century. He is an active member of the Society of Environmental Toxicology and Chemistry (SETAC), where he previously served on the Board of Directors, and the Society of Toxicology (SOT).

5. Hilary Godwin, Ph.D., University of California at Los Angeles (UCLA), Los Angeles, CA--i. *Expertise*: Chemistry and environmental health.

ii. *Education*: B.S. in Chemistry from University of Chicago; Ph.D. in Physical Chemistry from Stanford University.

iii. *Professional Experience*: Professor Godwin joined the UCLA faculty in 2006 and is currently a Professor in the Environmental Health Sciences Department and in the Institute of the Environment and Sustainability. She conducted postdoctoral research from 1994-1996 at the Johns Hopkins University School of Medicine in the Department of Biophysics and Biophysical Chemistry, where she was a National Institutes of Health postdoctoral fellow. Prior to joining the faculty at UCLA, Dr. Godwin was on the faculty of the Department of Chemistry at Northwestern University, where she was an Assistant Professor (1996-2000), Associate Professor (2000-2006), Associate Chair (2003-2004), and Chair (2004-2006) of Chemistry. She has served as Chair of the Department of Environmental Health Sciences (2007- 2008) and Associate Dean for Academic Programs (2008-2011) in the School of Public Health at UCLA as well as Faculty Director for the Global Bio Lab at UCLA (2009-2011 and 2013-present). Dr. Godwin has received several awards, including a Camille Dreyfus Teacher-Scholar Award, an Alfred P. Sloan Research Fellowship, a National Science Foundation CAREER Award, a

Burroughs Wellcome Fund Toxicology New Investigator Award, and a Camille and Henry Dreyfus New Faculty Award. She was a Howard Hughes Medical Institute Professor from 2002-2006 and was elected as a fellow of the American Association for the Advancement of Science in 2009. Dr. Godwin is a Luskin Scholar and is coPI and Director for Education and Outreach Activities for the University of California Center for Environmental Implications of Nanotechnology. Dr. Godwin's research focuses on elucidating the molecular toxicology of engineered nanomaterials and development of assays for detection and analysis of infectious diseases. She collaborates with Professor Tim Malloy in the UCLA School of Law on the development and analysis of new approaches to nanoregulatory policy and assessment of alternatives for hazardous substances. She also works actively with local organizations and community groups to prepare for and diminish the impact of climate change on public health.

6. Jane A. Hoppin, Sc.D., North Carolina State University (NCSU), Raleigh, NC--

i. *Expertise*: Environmental health and epidemiology.

ii. *Education*: B.S. in Environmental Toxicology from University of California, Davis; M.S. in Environmental Health Sciences and Sc.D. in Environmental Health and Epidemiology from Harvard School of Public Health.

iii. *Professional Experience*: Dr. Hoppin is an Associate Professor in the Department of Biological Sciences and Deputy Director of the Center for Human Health and the Environment at NCSU. Dr. Hoppin's research focuses on the human health effects of pesticides and other agricultural exposures. Prior to joining NCSU in August 2013, Dr. Hoppin was a Staff Scientist at the National Institute of Environmental Health Sciences (NIEHS) where she was one of the principal investigators of the Agricultural

Health Study, a federally funded prospective study of farmers and their spouses in North Carolina and Iowa. During her tenure at NIEHS, Dr. Hoppin focused her research on the adult respiratory health effects of pesticides and other agricultural exposures. In 2010, she was awarded the NIEHS Staff Scientist of the Year award. Dr. Hoppin has published over 170 peer reviewed publications in the field of environmental health and epidemiology. Dr. Hoppin has served on the editorial boards of the *American Journal of Epidemiology* and the *Journal of Occupational Medicine and Toxicology*; in 2010, she guest edited a special edition of *International Journal of Environmental Research and Public Health* focused on pesticides and health. Dr. Hoppin also focuses on the respiratory and allergic health effects of phthalates and the related exposure assessment issues.

7. David Alan Jett, Ph.D., National Institutes of Health (NIH), Bethesda, MD--i. *Expertise:* Neuropharmacology and toxicology.
- ii. *Education:* B.A. in Biology from Hampton Institute; M.S. in Zoology/Toxicology from University of Maryland; and Ph.D. in Neuropharmacology and Toxicology from University of Maryland School of Medicine.
- iii. *Professional Experience:* Dr. Jett is a Program Director at the National Institute of Neurological Disorders and Stroke (NINDS) where he directs the NIH Countermeasures Against Chemical Threats (CounterACT) Program designed to develop new drugs and diagnostic tools for treating victims of chemical exposures during an emergency, among other duties. Dr. Jett conducted postdoctoral research and subsequently joined the faculty at Johns Hopkins University's Bloomberg School of Public Health Department of Environmental Health Sciences where he conducted

research as a university professor for several years. Dr. Jett's scientific interest is in the impact of pesticides on nervous system function, including the molecular and cellular mechanisms of cognitive and neural development. Specifically, he has expertise and experience with organophosphorus pesticides and nerve agents, and the heavy metal lead. Dr. Jett's other interests at NINDS are programs designed to increase diversity in the neuroscience research workforce, and translational research programs.

8. Kurunthachalam Kannan, Ph.D., New York State Department of Health, Albany, NY and State University of New York at Albany, NY--i. *Expertise:* Environmental chemistry and ecotoxicology.

ii. *Education:* B.S. in Agricultural Sciences and M.S. in Agricultural Microbiology from Tamil Nadu Agricultural University; M.S. and Ph.D. in Environmental Chemistry and Ecotoxicology from Ehime University.

iii. *Professional Experience:* Dr. Kannan is a Research Scientist at Wadsworth Center, New York State Department of Health in Albany, NY, where he is Chief of the Organic Analytical Laboratory at the Center. He also holds a joint appointment as a Professor at the Department of Environmental Health Sciences, School of Public Health, State University of New York at Albany. He also holds visiting professorships at Ehime University, Japan and Harbin Institute of Technology and Nankai University, China. Dr. Kannan's research is focused on environmental distribution, bioaccumulation, human exposure, food contamination, and fate of toxicants. His current research interests are in understanding human exposure to environmental toxicants including pesticides and health effects associated with such exposures. Dr. Kannan has published more than 400 research articles in peer-reviewed journals, 20 book chapters, and edited a book. Dr.

Kannan is one of the top 10 most highly cited researchers (ISI (Highly Cited)) in ecology/environment in the world. He is ranked top two globally on the list of Thompson ISI's most highly cited researchers in environment/ecology domain. Dr. Kannan is a recipient of several international awards and honors throughout his career and to name a few, Governor's Gold Medal in 1986 and Society of Environmental Toxicology and Chemistry's Weston F. Roy Environmental Chemistry award in 1999. Dr. Kannan is the Editor-in-Chief of *Ecotoxicology and Environmental Safety* and serves as an Associate Editor of several professional journals and on the editorial board of several international journals. Dr. Kannan is a recipient of Super Reviewer Award for his scholarly and timely reviews of manuscripts submitted to *Environmental Science and Technology*, the American Chemical Society journal. He is a frequent reviewer of research proposals submitted for funding agencies in several countries throughout the world. Dr. Kannan has mentored more than 10 masters and doctoral level students and advised more than 20 postdoctoral research associates in his laboratory. He secured more than \$15 million in research grants in the past 10 years.

9. Coby Schal, Ph.D., North Carolina State University (NCSU), Raleigh, NC--i.  
*Expertise:* Entomology.

ii. *Education:* B.S. in Biology from State University of New York at Albany; Ph.D. in Entomology from University of Kansas.

iii. *Professional Experience:* Dr. Schal is the Blanton J. Whitmire Distinguished Professor of Structural Pest Management at NCSU, where he is also co-founder and member of the Executive Committee of the W. M. Keck Center for Behavioral Biology and member of the Agromedicine Institute and the Genetics Graduate Program. Between



1984-1993, he was Assistant and Associate Professor and Extension Specialist of Urban Entomology at Rutgers University, NJ. He is a leading authority on cockroach and bed bug behavior, chemical ecology, physiology, toxicology, biochemistry, and molecular biology. His research has resulted in publications, patents, and tools for pest management. His research on chemical ecology has delineated pheromone-mediated communication in cockroaches, oviposition attractants in mosquitoes, and the evolution of pheromone communication in moths. His team also characterized the role that juvenile hormone plays in regulating sexual behavior and sexual maturation in insects and studies the function and regulation of cuticular waxes in various insects. Research in urban entomology in the last decade has concentrated on the biology of cockroach-produced allergens and intervention strategies to mitigate their pervasiveness in the indoor environment; profiles and mechanisms of insecticide resistance that form the basis for recommendations to the pest control industry; optimization of bait delivery systems, developing and testing repellents against urban pests, and assessing the impact of these approaches on pest behavior, humans, and the environment; and practical integrated solutions (IPM) to cockroach problems in livestock production facilities that emphasize reduced-risk approaches. Dr. Schal's research has been funded by EPA, U.S. Department of Housing and Urban Development (HUD), National Institutes of Health (NIH), National Science Foundation (NSF), U.S. Department of Agriculture (USDA), private foundations and industry and he has published over 230 peer-reviewed papers. He has served as subject editor of the *Journal of Economic Entomology* and *Pest Management Science*, and on the editorial boards of *Archives of Insect Biochemistry and Physiology*, *Journal of Chemical Ecology*, *Journal of Insect Science*, and *Psyche*. He also served on

several EPA and NSF panels and as panelist and panel manager for USDA grants panels, and has been an active volunteer with the Entomological Society of America, the Entomological Foundation, and the International Society of Chemical Ecology. He has mentored 28 graduate students and 32 postdoctoral researchers, as well as high school and undergraduate students. Dr. Schal teaches a graduate course in insect behavior, graduate seminars in urban entomology and chemical ecology, and contributes to a team-taught professional development course and insect physiology course. Recent honors include Lifetime Honorary Membership in the North Carolina Pest Management Association, Distinguished Achievement Award in Urban Entomology from the National Conference on Urban Entomology, elected Fellow of the Entomological Society of America, elected Fellow of the American Association for the Advancement of Science, NCSU's Research Friend of Extension Award, NCSU's Alumni Association Outstanding Research Award, the 2011 Silverstein-Simeone Award from the International Society for Chemical Ecology, and a Distinguished Member of Sigma Xi.

10. Judith Zelikoff, Ph.D., New York University School of Medicine, Tuxedo, NY--i. *Expertise:* Toxicology.

ii. *Education:* B.S. in Biology from Upsala College, M.S. in Microbiology from Farleigh Dickinson University, and Ph.D. in Experimental Pathology from University of Medicine and Dentistry of New Jersey--New Jersey Medical School.

iii. *Professional Experience:* Dr. Zelikoff, a tenured full professor and Principal Investigator, has more than 25 years experience using animal models for assessing the toxicology of inhaled pollutants including metals, nanomaterials, and pollution mixtures from combustible tobacco products, as well as that from wood burning and diesel

exhaust. Recently, studies in her laboratory have focused on the fetal basis of adult disease associated with prenatal exposure of mice to inhaled nanomaterials, ambient particulate matter (PM), and cigarette smoke (CS). Results from the cigarette smoke publications demonstrated that in utero exposure to a maternal dose of CS equivalent to smoking <1 pack of cigarettes/day increases risk factors in the offspring associated with cardiovascular disease, asthma, immune dysfunction, and attention-deficit hyperactivity disorder later in life and in a sex-dependent manner. Her tobacco studies have recently been extended to examine toxicity of smokeless tobacco (ST) using a mouse model of oral mucosal exposure, as well as toxicity of smoke from e-cigarettes and hookah. Studies with ST, like those with CS, examined the reproductive/developmental, immunological, cardiovascular, renal, and neurological/behavioral effects of repeated exposure during pregnancy. Earlier in her career, Dr. Zelikoff focused on environmental toxicology and published a significant number of papers on the toxicity of metals and pesticides on different fish species. Many of these publications were used to help inform policy and set regulations. In addition, immune biomarkers of effects, developed in these same fish species, were also used as indicators of aquatic pollution and efficacy of remediation. Dr. Zelikoff also has extensive experience as a scientific leader which is reflected by her many leadership roles. She currently serves on the Executive Board of the Society of Toxicology (SOT, 8,000 member society) as Council Secretary and previously as president of both the Metals and Immunotoxicology Society of Toxicology Specialty Sections where she received a Lifetime Achievement Award. In addition, she served as a full member on two National Institute of Environmental Health Sciences (NIEHS) Study Sections and continues to serve as an ad hoc member for numerous NIH

Special Emphasis Panels where she has also served as Chair. Currently, she is an editorial board member for *Environmental Health Perspectives* and serves as Associate Editor on numerous toxicological journals. As the New York University NIEHS Center Outreach Director, Dr. Zelikoff has led numerous community-guided and enrichment initiatives that have served to set public policy and improve public health by better informing local communities of the latest knowledge in environmental health.

**List of Subjects**

Environmental protection, Administrative practice and procedure, Pesticides and pests.

Dated: January 8, 2014.

David J. Dix,

*Director, Office of Science Coordination and Policy.*

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